



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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SUPERINTENDENT'S OFFICE

November 24, 2008

Attachment 5

Governing Board of Seattle City Light  
c/o: Jorge Carrasco, Superintendent  
Seattle City Light  
700 Fifth Avenue  
PO Box 34023  
Seattle, WA 98124-4023

Subject: New 20 Year Tier I Contracts from Bonneville Power Administration

Dear Mr. Carrasco:

In 2007, the Washington Legislature passed a law placing new requirements on all retail electric utilities. RCW 80.80 requires all retail electric utilities to ensure that any long-term contract of five years or longer for baseload power meets the emissions performance standard of 1,100 lbs/MWh of greenhouse gas emissions. RCW 80.80 also requires consumer-owned utilities to consult with Ecology to ensure that the proposed contract complies with the emissions performance standard. See RCW 80.80.70(2).

Ecology understands that you will be signing a new 20 year Tier I contract with the Bonneville Power Administration (BPA) soon. This contract will be subject to the requirements of RCW 80.80, which includes consultation with Ecology. To make this process easier, we are providing the requested consultation through this letter.

Some of the contracts between BPA utilities are named Load Following; others are called Slice and Block. We understand that you will use both types of contracts. Below is a discussion of how to produce the "Average emissions in lb/MWh" for each type of contract. The process for Load Following would be used to determine the "Average emissions in lb/MWh" for that portion of the total electricity to be provided by BPA. Likewise for the Slice and Block portion.

#### **Load Following**

Recently, BPA wrote to you explaining that for Load Following contracts, seven percent of the total mix of the electricity they provide is from unspecified resources. As we understand it, that number is for the current BPA system only. It does not include resources required to meet load

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growth, should you choose to have BPA meet your load growth within this contract. In the rule implementing RCW 80.80, the default greenhouse gas emissions from an unspecified resource is 2,600 lbs GHG/MWh. See WAC 173-407-300(5). Using the formula in the rule, the beginning BPA total power mix for Load Following customers is 182 lbs GHG/MWh. This figure has been calculated using the formula provided in the rule as follows:

$$AE = \frac{(F_1 \times MWh_1) + (F_2 \times MWh_2) + (F_3 \times MWh_3) + \dots + (F_n \times MWh_n)}{Total\ MWh}$$

where:

AE = Average emissions in lb/MWh  
F = Regulated greenhouse gases emissions factor in lb/MWh  
MWh = Total MWh purchased or generated by the utility's own generation capacity during the year  
Total MWh = Total MWh from all source types for that year

Using the “Expected Tier I Rate System Resources, 2012 – 2028, With Adjustments to Reflect 7% Unspecified Balancing Purchases from Market” table provided by BPA in their letter, the example calculation below uses the total amount of megawatt hours of electricity that BPA supplies; your calculation should be based on your projected purchases of megawatt hours you intend to buy.

Example data: BPA power mix

Power (MWh)	Source	GHG emissions factor (lbs/MWh)
5,989	Hydroelectric	0
736	Nuclear	0
16	Cogeneration - Biomass	0 <sup>1</sup>
47	Wind	0
511	Unspecified	2,600

<sup>1</sup> The cogeneration facility burns biomass for steam and power generation. Biomass is defined as a renewable fuel and therefore is considered in the rule to have a zero for its carbon emissions. Therefore, BPA has estimated zero for this value. For simplicity purposes you may treat this number as zero, but there in fact is a small amount of non-biomass fuel used to start the combustion process.

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Applying these numbers to the equation above yields average greenhouse gas emissions of 182 lbs/MWh for the BPA power mix:

$$AE = \frac{(0 \times 5989) + (0 \times 736) + (0 \times 16) + (0 \times 47) + (2600 \times 511)}{(5989 + 736 + 16 + 47 + 511)}$$

$$AE = 182.05 \text{ lbs/MWh}$$

*Note: your calculation should be based on your actual projected purchases of megawatt hours.*

If you do not expect to have BPA meet Above-High-Water-Mark Load, then the emissions rate associated with the contract is significantly below the emissions performance standard of 1,100 pounds of greenhouse gases per megawatt and the contract meets the requirements of RCW 80.80.

If you expect BPA to meet any additional requirements above your High Water Mark within this contract, the emission figure will need to be recalculated for each year of the contract. This recalculation should be based on the generation resources that you expect to purchase from BPA. If BPA is expected to meet your entire load growth with renewables, then no additional emissions will be calculated. We can supply you with a spreadsheet to assist you with load growth calculations on request. If you have not already done so, you should do this forecasting prior to signing the BPA long term contract.

### **Slice and Block**

BPA also explained in their letter that the current BPA system used to serve Slice and Block contracts does not contain any unspecified resources. Therefore, if your first year delivery is less than or equal to your High Water Mark, your BPA total power mix is zero lbs GHG /MWh.

Using the formula from the rule described in the example above, and applying the data supplied by BPA the example calculation below uses the total amount of megawatt hours of electricity that BPA supplies for Slice and Block contracts; your calculation should be based on your projected purchases of megawatt hours you intend to buy.

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Example data: BPA power mix

Power (MWh)	Source	GHG emissions factor (lbs/MWh)
5,989	Hydroelectric	0
736	Nuclear	0
16	Cogeneration	0 <sup>1</sup>
47	Wind	0

Applying these numbers to the equation above yields average greenhouse gas emissions of zero lbs/MWh for the BPA power mix:

$$AE = \frac{(0 \times 5989) + (0 \times 736) + (0 \times 16) + (0 \times 47)}{(5989 + 736 + 16 + 47)}$$

$$AE = 0 \text{ lbs/MWh}$$

If BPA is expected to meet your entire load growth with renewables, then no additional calculation is necessary. However, if you expect that you would request service *under this contract* to meet all or a portion of your load growth, you should take further steps. You will need to estimate the emissions associated with the resources that BPA would be expected to use to meet that growth, using the formula cited above and assigning unspecified emission rates to any resources that cannot be identified. If you have not already done so, this forecasting should be done prior to signing the BPA long term contract.

Again, we can supply you with a spreadsheet to assist you with load growth calculations on request.

If you have any questions, you may call me at (360) 407-6823 or Alan Newman at (360) 407-6810. His e-mail address is anew461@ecy.wa.gov.

Sincerely,



Sarah Rees  
Program Development Section Manager  
Air Quality Program

TT:lb

cc: Peggy Duxbury, Seattle City Light